

SERVICE	ATTENDING	RESIDENT	SEE ORCA FOR ALLERGIES
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### Insulin Infusion Protocol

**Goal BG Range = 80-180 mg/dL**

**ICU Goal BG Range = \_\_\_\_\_**

#### Discontinue All Previous Insulin Orders

Algorithm 1		Algorithm 2		Algorithm 3		Algorithm 4	
BG	Units/hr	BG	Units/hr	BG	Units/hr	BG	Units/hr
<60 = Hypoglycemia (See below for treatment)							
<70	Off	<70	Off	<70	Off	<70	Off
70-109	0.2	70-109	0.5	70-109	1	70-109	1.5
110-119	0.5	110-119	1	110-119	2	110-119	3
120-149	1	120-149	1.5	120-149	3	120-149	5
150-179	1.5	150-179	2	150-179	4	150-179	7
180-209	2	180-209	3	180-209	5	180-209	9
210-239	2	210-239	4	210-239	6	210-239	12
240-269	3	240-269	5	240-269	8	240-269	16
270-299	3	270-299	6	270-299	10	270-299	20
300-329	4	300-329	7	300-329	12	300-329	24
330-359	4	330-359	8	330-359	14	>330	28
>360	6	>360	12	>360	16		

**General Guidelines:**

- Standard drip: 100 units/100 mL 0.9% NaCl via an infusion device
- Start when:
  - o BG > 140
- Discontinue insulin infusion when patient is eating **AND** has received first dose of subcutaneous insulin.
- Hypoglycemia protocol for BG<60 mg/dL (see back for specifics)

**Intravenous Fluids:**

Recommendations for patients that are not eating:

**DM Type 1** (10 grams glucose/hour) **DM Type 2** (5 grams glucose/hr)

- D51/2 normal saline with 20 mEq/L Potassium chloride IV at \_\_\_\_\_ mL/hr
- D5LR with 20 mEq/L Potassium chloride IV at \_\_\_\_\_ mL/hr
- TPN or Enteral Feeds (see separate orders) \_\_\_\_\_ at \_\_\_\_\_ mL/hr

PHYSICIAN SIGNATURE	PRINT NAME	PAGER	UPIN	DATE	TIME
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PT.NO

**Medical Center**

NAME

**INSULIN INFUSION PROTOCOL ORDERS**

DOB

WHITE - MEDICAL RECORD  
CANARY - PHARMACY  
PINK - NURSING

PHYSICIAN ORDER - YELLOW

### Initiating The Infusion

- **Algorithm 1:** Start here for most patients.
- **Algorithm 2:** Start here if s/p CABG, solid organ transplant, receiving glucocorticoids, or patient receiving >80 units/day of insulin as an outpatient.
- **Algorithm 3** NO PATIENTS START HERE.
- **Algorithm 4** NO PATIENTS START HERE

### Moving Algorithms: (Move up or down only one algorithm per BG check)

- Moving Up: If BG is out of goal range **and** has not decreased by at least 60 mg/dL
- Moving Down: When blood glucose <70 mg/dL or if BG decreases >100 mg/dL in an hour **OR** if pt has hypoglycemic episode.

### Maintain Patient Within Current Algorithm-Once BG is in Goal Range

- Adjust **RATE** within current algorithm until patient is in goal range for 4 hours
- Once patient is within goal range for 4 hours, **there is no need to adjust RATE unless BG falls out of goal range**

### Patient Monitoring:

- Check BG every hour until it is within **goal** range for 4 hours. Then check every 2 hours X2, then every 4 hours. Resume hourly checks if BG falls out of goal range.
- Hourly monitoring may be indicated for critically ill patients even if they have stable blood glucose.
- If patient is eating, check BG every hour X 3 after meals.
- **TPN/Tube Feeds**
  - **Decrease insulin infusion rate by 50% if nutritional therapy is discontinued or significantly reduced and check BG every hour X 4 hrs.**

### Treatment of Hypoglycemia (BG<60 mg/dL) Signs and symptoms include, palpitations, diaphoresis, weakness, altered mental status.

- **Turn off** drip AND
- Give D50W IV
  - BG 50-60 mg/dL **25 mL** (1/2 amp)
  - BG <50 mg/dL **50mL** (1 amp)
- Recheck BG every 20 minutes and repeat **25mL** of D50W IV if BG<60mg/dL. Restart drip once blood glucose is >70 mg/dL X2 checks. *Restart infusion at a lower algorithm* (see moving down).

### Notify the Physician:

- For any blood glucose change >100 mg/dL in one hour.
- For blood glucose  $\geq$  360 mg/dL
- For any hypoglycemia which results in loss of consciousness
- For hypoglycemia which has not resolved within **20 min** of administering **50mL** of D50W IV and discontinuing the insulin infusion.
- Failure of algorithm 4 (Consider Endocrine consult)